

What Is Claimed Is:

1. A purified 20 kDa presenilin 2 C-terminal fragment (PS2-CTF).
2. An antibody having specific binding affinity to the 20 kDa PS2-CTF according to claim 1.
3. A method of detecting 20 kDa PS2-CTF in a sample, comprising:
a) contacting said sample with an antibody according to claim 2, under conditions such that immunocomplexes form, and
b) detecting the presence of said antibody bound to said polypeptide.
4. A diagnostic kit comprising:
a) a first container means containing the antibody according to claim 2 and
b) a second container means containing a conjugate comprising a binding partner of said antibody and a label.
5. A hybridoma which produces the antibody according to claim 2.
6. An isolated nucleic acid molecule encoding the 20 kDa PS2-CTF according to claim 1.
7. A cell that contains the nucleic acid molecule according to claim 6.
8. A non-human organism that contains the nucleic acid molecule according to claim 6.

9. A method for screening compounds that inhibit proteolytic processing of presenilin 2 in a cell comprising (a) providing a compound to a cell, wherein the cell proteolytically processes presenilin 2, (b) measuring the amount of 20 kDa presenilin 2 C-terminal fragment (PS2-CTF) produced in said cell, and (c) comparing said amount produced to an amount of PS2-CTF produced in a cell not treated with said compound, wherein a decreased amount of 20 kDa presenilin 2 fragment in said cell treated with said compound as compared to a cell not treated with said compound indicates that said compound inhibits proteolytic processing of presenilin 2 in said cell.

10. The method according to claim 9 wherein said amount of 20 kDa presenilin 2 fragment produced in said cell is determined by an ELISA assay using an antibody specific to the 20 kDa presenilin 2 fragment.

11. An isolated compound that inhibits proteolytic processing of presenilin 2 in a cell, wherein said compound bind to or interferes with a presenilin 2 proteolytic processing site selected from the group consisting of PEMEED (SEQ ID NO: 2), PEMEEDS (SEQ ID NO: 4), PEMEEDSY (SEQ ID NO: 5), PEMEEDSYD (SEQ ID NO: 3), EMEEDS (SEQ ID NO: 6), EMEEDSY (SEQ ID NO: 7), EMEEDSYD (SEQ ID NO: 8), EEDSYD (SEQ ID NO: 9), EEDSYDS (SEQ ID NO: 10), EEDSYDSF (SEQ ID NO: 11), EDSYDS (SEQ ID NO: 12), EDSYDSF (SEQ ID NO: 13), and EDSYDSFG (SEQ ID NO: 14).

12. A method of inhibiting apoptotic cell death comprising preventing proteolytic cleavage of presenilin 2 at a cleavage site which generates a 20 kDa C-terminal proteolytic fragment.